

ABSTRACT

The invention relates to a glass and a glass-ceramic comprising beta-quartz and/or keatite solid solutions, and to a process for their production, and to their use as substrate material for coating. Glass-ceramic comprising beta-quartz and/or keatite solid solutions with a surface roughness without polishing of $R_a < 50$ nm, a thermal expansion in the temperature range between 20°C and 300°C of $< 1.2 \cdot 10^{-6}/K$, a transmission in the near infrared region at 1050 nm of $> 85\%$ for a 4 mm thickness, and a composition in % by weight, based on the total composition, containing:

Li ₂ O	3.0-5.5
Na ₂ O	0-2.5
K ₂ O	0-2.0
Σ Na ₂ O+K ₂ O	0.5-3.0
Σ MgO+ZnO	< 0.3
SrO	0-2.0
BaO	0-3.5
B ₂ O ₃	0-4.0
Al ₂ O ₃	19.0-27.0
SiO ₂	55.0-66.0
TiO ₂	1.0-5.5
ZrO ₂	0-2.5
Σ TiO ₂ +ZrO ₂	3.0-6.0
P ₂ O ₅	0-8.0
Fe ₂ O ₃	< 200 ppm
F	0-0.6 as substitute for O

and, if appropriate, at least one refining agent, such as As₂O₃, Sb₂O₃, SnO₂, CeO₂, sulphate and chloride compounds.